

this amendment, claims 11-13, 15-17, 19, 21-23, 31, and 43-49 have been amended. Claims 50-57 have been added, and claims 20 and 42 have been canceled without prejudice. Further, the specification has been amended to track the changes to the figures. No new matter has been added by these amendments.

In the Claims:

1. Please amend claims 11-13 as shown in the marked-up copy of the amended claims;
2. Please leave claim 14 unchanged;
3. Please amend claims 15-17 as shown in the marked-up copy of the amended claims;
4. Please amend claim 19 as shown in the marked-up copy of the amended claims;
5. Please cancel claim 20 without prejudice;
6. Please amend claims 21-23 as shown in the marked-up copy of the amended claims;
7. Please leave claim 24 unchanged;
8. Please amend claim 31 as shown in the marked-up copy of the amended claims;
9. Please leave claims 34-35 unchanged;
10. Please leave claims 38-39 unchanged;
11. Please cancel claim 42 without prejudice;
12. Please amend claims 43-39 as shown in the marked-up copy of the amended claims;
- and
13. Please add new claims 50-57 as shown in the enclosed clean copy of the claims.

In the Drawings:

1. Please delete Figure 30(f) from the application without prejudice; and
2. Please delete Figure 47 from the application without prejudice.

In the Specification:

1. In the section labeled "Brief Description of the Drawings," please amend the paragraph on page 9, lines 20-21, as shown in the enclosed marked-up copy of the amended specification paragraph; and

CLEAN COPY OF CLAIMS:

11. (thrice amended) A locking device comprising:
- (a) a locking mechanism for locking and unlocking movement of an object;
 - (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
 - (c) a semiconductor memory device for storing registered fingerprint data;
 - (d) a processor configured to determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said fingerprint sensor matches with any of the registered fingerprint data stored in said semiconductor memory device;
 - (e) a control unit for controlling whether said locking mechanism locks or unlocks movement of said object in response to said fingerprint match determination by said processor; and
 - (f) a key unit separated from said locking mechanism and independently portable with respect to said control unit and said locking mechanism, said portable key unit comprising one of the group consisting of: (1) said sensor, said semiconductor memory device, and said processor but not said control unit, and wherein said portable key unit is in communication with said control unit via wireless communication, (2) said sensor and said processor but not said semiconductor memory device and not said control unit, and wherein said portable key unit is in communication with said semiconductor memory device and said control unit via wireless communication, (3) said processor but not said sensor, not said semiconductor memory device, and not said control unit, and wherein said portable key unit is in communication with said sensor, said semiconductor memory device, and said control unit via wireless communication, and (4) said sensor and said semiconductor memory device but not said processor and not said control unit, and wherein said portable key unit is in communication with said processor and said control unit via wireless communication.

12. (thrice amended) The locking device of claim 11 wherein said portable key unit comprises said sensor, said processor, and said semiconductor memory device but not said control unit, and wherein said portable key unit is in communication with said control unit via wireless communication.

13. (twice amended) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via magnetic coupling.

15. (thrice amended) The locking device of claim 11 wherein said portable key unit comprises said processor but not said sensor, not said semiconductor memory device, and not said control unit, and wherein said portable key unit is in communication with said sensor, said semiconductor memory device, and said control unit via wireless communication.

16. (thrice amended) A locking device comprising:

- (a) a locking mechanism for locking and unlocking movement of an object;
- (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
- (c) a semiconductor memory device for storing registered fingerprint data;
- (d) a first processor configured to determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said fingerprint sensor matches with any of the registered fingerprint data stored in said semiconductor memory device;
- (e) a second processor in communication with said first processor and said semiconductor memory device, said second processor being configured to (1) create fingerprint data from the fingerprint pattern of an authorized person detected by said fingerprint sensor and (2) register said authorized person by storing said created fingerprint data in said semiconductor memory device;

(f) a control unit for controlling whether said locking mechanism locks or unlocks movement of said object in response to said fingerprint match determination by said processor; and

(g) a key unit separated from said locking mechanism and independently portable with respect to said control unit and said locking mechanism, said portable key unit comprising either (i) said first processor but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor, or (ii) said second processor but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

17. (thrice amended) The locking device of claim 11 wherein said portable key unit comprises said sensor and said processor but not said semiconductor memory device and not said control unit, and wherein said portable key unit is in communication with said semiconductor memory device and said control unit via wireless communication.

19. (thrice amended) A switching device comprising:

(a) a starting switch for starting operation of an object;

(b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;

(c) a semiconductor memory device for storing registered fingerprint data;

(d) a processor configured to (1) determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said sensor matched with any of the registered fingerprint data stored in said semiconductor memory device and (2) actuate said starting switch in response to said fingerprint match determination being positive; and

(e) a key unit separated from and independently portable with respect to said starting switch, said portable key unit comprising one selected from the group consisting of: (1) said sensor, said semiconductor memory device, and said processor, and wherein said portable key unit is configured to communicate with said starting switch via wireless communication, (2) said sensor and said processor but not said

semiconductor memory device, and wherein said portable key unit is configured to communicate with said semiconductor memory device and said starting switch via wireless communication, (3) said processor but not said sensor and not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said sensor, said semiconductor memory device, and said starting switch via wireless communication, and (4) said sensor and said semiconductor memory device but not said processor, and wherein said portable key unit is configured to communicate with said processor via wireless communication.

21. (thrice amended) The switching device of claim 19 wherein said portable key unit comprises said sensor and said processor but not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said semiconductor memory device and said starting switch via wireless communication.
22. (twice amended) A switching device comprising:
- (a) a starting switch for starting operation of an object;
 - (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
 - (c) a semiconductor memory device for storing registered fingerprint data;
 - (d) a first processor configured to (1) determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said sensor matched with any of the registered fingerprint data stored in said semiconductor memory device and (2) actuate said starting switch in response to said fingerprint match determination being positive;
 - (e) a second processor in communication with said first processor and said semiconductor memory device, said second processor being configured to (1) create fingerprint data from the fingerprint pattern of an authorized person detected by said fingerprint sensor and (2) register said authorized person by storing said created fingerprint data in said semiconductor memory device; and

(f) a portable key unit separated from said starting switch and independently portable with respect to said starting switch, said portable key unit comprising either (i) said first processor but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor, or (ii) said second processor but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

23. (twice amended) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said starting switch via magnetic coupling.

31. (twice amended) The switching device of claim 19 wherein said portable key unit comprises said sensor, said semiconductor memory device, and said processor, and wherein said portable key unit is configured to communicate with said starting switch via wireless communication.

43. (amended) The locking device of claim 11 wherein said portable key unit comprises said sensor and said semiconductor memory device, but not said processor and not said control unit, and wherein said portable key unit is in communication with said processor and said control unit via wireless communication.

44. (amended) The switching device of claim 19 wherein said portable key unit comprises said sensor and said semiconductor memory device but not said processor, and wherein said portable key unit is configured to communicate with said processor via wireless communication.

45. (amended) The switching device of claim 19 wherein said portable key unit comprises said processor but not said sensor and not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said sensor, said semiconductor memory device, and said starting switch via wireless communication.

46. (amended) The locking device of claim 16 wherein said portable key unit comprises said first processor but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor.
47. (amended) The locking device of claim 16 wherein said portable key unit comprises said second processor but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.
48. (amended) The switching device of claim 22 wherein said portable key unit comprises said first processor but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor.
49. (amended) The switching device of claim 22 wherein said portable key unit comprises said second processor but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.
50. (new) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via infrared communication.
51. (new) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via electrostatic coupling.
52. (new) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said control unit via infrared communication.
53. (new) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said control unit via electrostatic coupling.
54. (new) The locking device of claim 12 wherein the processor is configured to make a negative fingerprint match determination if said fingerprint data created from the fingerprint pattern detected by said sensor perfectly matches any of said registered fingerprint data.

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55. (new) The switching device of claim 31 wherein the processor is configured to make a negative fingerprint match determination if said fingerprint data created from the fingerprint pattern detected by said sensor perfectly matches any of said registered fingerprint data.

56. (new) The locking device of claim 12 wherein the portable key unit comprises a plurality of said processors.

57. (new) The switching device of claim 31 wherein the portable key unit comprises a plurality of said processors.